UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,244	11/13/2001	Paul W. Dent	4015-1813	3623

24112 7590 04/18/2005	EXAMINER
COATS & BENNETT, PLLC P O BOX 5 RALEIGH, NC 27602	NGUYEN, STEVEN H D

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/007,244	DENT, PAUL W.
	Examiner	Art Unit	
	Steven HD Nguyen	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>13 November 2001</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>40-48</u> is/are pending in the application.
　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☒ Claim(s) <u>40-44</u> is/are allowed.
6)☒ Claim(s) <u>45-48</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
　　a)☐ All　b)☐ Some *　c)☐ None of:
　　　1.☐ Certified copies of the priority documents have been received.
　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.
　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date <u>11/13/01</u>.
4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____ .

DETAILED ACTION

Claim Objections

1.   Claims 41-42 are objected to because of the following informalities:

As claim 41-42, "a transmit direction" should be changed – the transmit direction --.

As claim 43, "a direction" should be changed to – the transmit direction --.

Appropriate correction is required.

Specification

2.   The first sentence, after "April 6, 1998", inserting – now US patent 6,377,558 --.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 45-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown

(USP 6157621) in view of Varma (USP 5859835).

Regarding claim 45, Brown discloses a method including the steps of determining a

subset of directions in which said directive beams can be transmitted in a next transmission (Fig

48, Ref channel assignment and 628 and 630 or Fig 112A, Ref channel assignment and Ref 1288

and 1290 is used for generating a direction beam and Fig 3, Ref 486 for using to steer the beam

to the cell within a supercell, Fig 112B, the OAD used for steering the beams and mapping the

data packet to the beam in a time sequence); mapping a destination identifier code stored with

each said data packets to a corresponding beam direction and selecting only data packets whose

destinations map to a direction within said subset of directions (Fig 48, Ref 624 and 630 or Fig

112A, Ref 1278 and 1292 for using to map the call ID and node of the packet with the beam,

channel, cell and suppercell, See Col. 21, lines 47 to col. 22, lines 18 of Fig 48 and Col. 60, lines

32 to col. 61, lines 12) wherein the packets is stored at the buffer (Fig 112A, Ref 1309 and col.

22, lines 11-14, the packets are stored in the buffer of the beam). However, Brown fails to

disclose the steps of ordering said selected data packets according to how long they have been

stored in said buffer memory, with said selected data packets which have been stored the longest

ordered first; and transmitting the selected data packets that have been stored the longest first. In

the same field of endeavor, Varma discloses a method and system for attaching a time stamp for

each packet and ordering the packets in the queues based on the time stamp (Fig 4, Ref 32

includes the queues for storing the sorted packet based on time stamp, Fig 12A and scheduler for

selecting the packets with smallest time stamp in each queue for transmitting to next node, Fig

12B, See Abstract, See col. 5, lines 45-57, col. 14, lines 30-40).

Since, Brown suggests the message transmission times are determined based on the

queuing delay and the use of FIFO buffer. Therefore, it would have been obvious to one of

ordinary skill in the art at the time of invention was made to implement a method for selecting

the packets with oldest time in the buffer for transmitting to next node as disclosed by Varma's

system and method. The motivation would have been to prevent a stalled queue in the system.

Regarding claim 46, Brown and Vamar fail to disclose the step of deleting the selected data packets from the buffer memory which have been transmitted. However, the examiner takes an official notices that a method and system for releasing or deleting the transmitted packets from the queue or buffer or memory is well known and expected in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to implement a method for deleting the transmitted packets from the buffer into the system and method of Brown and Varma. The motivation would have been to prevent data error when the new packet is written on the top of the old packet.

Regarding claim 47, Varma discloses the step of setting an indication flag in the buffer memory in association with the selected data packets already transmitted (Col. 17, lines 9-13, the value of counter is zero for indicating the selected packets already transmitted).

Regarding claim 48, Brown and Vamar fail to disclose the step of releasing memory locations in the buffer memory where the selected data packets that have been transmitted were stored so as to provide storage capacity for new data packets. However, the examiner takes an official notices that a method and system for releasing the memory location when the packets have been transmitted from the queue or buffer or memory is well known and expected in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to implement a method for releasing the memory location when the packets have been transmitted from the queue or buffer or memory into the system and method of Brown and Varma. The motivation would have been to prevent data error when the new packet is written on the top of the old packet.

Allowable Subject Matter

5.   Claims 40-44 are allowed.

6.   The following is a statement of reasons for the indication of allowable subject matter: the prior arts fails to disclose a scheduler for selecting data packets from a buffer memory to be transmitted in a next time period using multiple directional transmission beams controllable in direction, said scheduler comprising: a backlog tracker determining a waiting time for each data packet, said waiting time indicative of how long each data packet has waited in the buffer memory for transmission; a first selector for selecting the data packet that has been waiting the longest as indicated by the backlog tracker; and a second selector selecting further data packets for simultaneous transmission in descending order of waiting time, said second selector skipping data packets requiring a transmit direction incompatible with the direction of transmission of a data packet previously selected for transmission at a same time.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Turner (USP 5260935) discloses a method and system for transmitting a packet based on the waiting time of packet in the queue.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven HD Nguyen whose telephone number is (571) 272-3159. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy D Vu can be reached on (571) 272-3155. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven HD Nguyen
Primary Examiner
Art Unit 2665
4/12/05